[0059] Communication of measurement restrictions from the eNB **170** to the UE **110** might be as follows. Resource restrictions could be communicated to a UE **110** in an explicit manner, e.g., exclusively via RRC signaling or a combination of RRC and dynamic signaling (dynamic selection of one resource restriction or rank restriction could be dynamic for example). An example information element **700** for RRC signaling of CSI process with resources restriction is shown in FIG. **7**. FIG. **7** illustrates components of higher layer signaling.

[0060] Concerning UE behavior considering measurement restrictions, the following are examples of such. For CSI feedback, the UE **110** will recognize the resource restrictions when measuring CSI measurement REs or interference from IMRs that are configured by higher layer signaling. A UE, for purposes of determining CSI feedback, will not average across the measurement restrictions for the purposes of determining CQI and RI feedback. If a 1-port CSI-RS is configured then rank determination is not applicable. If a 2-port CS-RS is configured, then the UE may determine and feedback rank. It is also possible for the eNB to restrict the rank of an UE to 1 (one).

[0061] FIG. **8** is a logic flow diagram performed by a base station for multiple restrictions for CSI reporting. This figure illustrates the operation of an exemplary method, a result of execution of computer program instructions embodied on a computer readable memory, functions performed by logic implemented in hardware, and/or interconnected means for performing functions in accordance with exemplary embodiments. It is assumed the blocks in FIG. **8** are performed by a base station such as eNB **170**, e.g., under control in part of the MIMO module **150** and scheduler **151**.

[0062] For ease of reference, assume that the flow in FIG. **8** is a method **800**. The eNB **170**, as part of method **800**, in block **810** performs the operation of configuring a user equipment with restrictions that restrict resources carrying reference signals and interference measurement resources to specific resources to be used by the user equipment for determining channel state information. The restrictions are both of the following: first restrictions in time, frequency, or both time and frequency of resources that carry the reference signals (block **815**); and second restrictions in time, frequency, or both time and frequency of resources that carry the interference measurement resources (block **820**). The first and second restrictions may be different. In block **825**, the eNB **170** performs the operation of transmitting the reference signals and interference measurement resources to the user equipment. The eNB **170**, in block **830**, performs the operation of receiving from the user equipment the channel state information determined based on the reference signals, interference measurement resources, and the restrictions.

[0063] Additional exemplary embodiments are as follows. A method as in method **800**, wherein the restrictions restrict specific resources to one of a set of subcarriers, a set of physical resource blocks, a set of subbands, or a set of subframes for one or both of the reference signals or the interference measurement resources. A method as in this paragraph, wherein the specific resources are further restricted to certain resources that occur during a frame.

[0064] A method as in method **800** and the previous paragraph, wherein the configuring further comprises configuring the user equipment to restricting use by the user equipment to the specific resources as a function of sub-frame number and changing the sub-frame number with time.

[0065] A method as in method **800** and paragraphs referencing method **800**, wherein:

[0066] the method further comprises:

[0067] determining a pairing between the user equipment and one or more paired user equipment based on channel state information from the user equipment that was determined from non-user-equipment-specific reference signals and interference measurement resources and from a plurality of other user equipment including the one or more paired user equipment; and

[0068] precoding, using the determined pairing, user equipment-specific channel state information reference signals based on a precoding weight determined for the user equipment and precoded information to be transmitted on resources corresponding to the user equipment-specific interference measurement resources for the user equipment; and

[0069] transmitting comprises transmitting the precoded user equipment-specific channel state information reference signals to the user equipment and transmitting precoded information on the resources corresponding to the user equipment-specific interference measurement resources.

[0070] A method as in method **800** and paragraphs referencing method **800**, further comprising: coding information based on a precoder selected using the received channel state information; and transmitting the coded information to the user equipment. This is typically a MU-MIMO transmission.

[0071] A method as in method **800** and paragraphs referencing method **800**, wherein the channel state information comprises one or more of a channel quality indicator or a rank indictor.

[0072] A method as in method **800** and paragraphs referencing method **800**, wherein configuring further comprises transmitting an information element indicating the restrictions to the user equipment using radio resource control signaling.

[0073] A method as in method **800** and paragraphs referencing method **800**, where an entire bandwidth is divided into a number of sub-bands, and the restrictions limit use by the user equipment to particular ones of the sub-bands for one or both of the reference signals or the interference measurement resources. The method of this paragraph, wherein configuring further comprises changing the restrictions from one set of sub-bands in a first subframe to a different set of sub-bands in a second subframe.

[0074] Another example is an apparatus comprising: means for configuring a user equipment with restrictions that restrict resources carrying reference signals and interference measurement resources to specific resources to be used by the user equipment for determining channel state information. The restrictions are both of the following: first restrictions in time, frequency, or both time and frequency of resources that carry the reference signals; and second restrictions in time, frequency, or both time and frequency of resources that carry the interference measurement resources. The first and second restrictions may be different. The apparatus comprises means for transmitting the reference signals and interference measurement resources to the user equipment and means for receiving from the user equipment the channel state information determined based on the reference signals, interference measurement resources, and the restrictions. An apparatus as in this paragraph, with means for performing any of the methods in the paragraphs referencing method **800**.

[0075] Additional exemplary embodiments are as follows. An apparatus as in any apparatus above, wherein the restric-